

PCBs and Midwest weather have much in common. Both are cursed and discussed at great length, but there is not much that can be done with either.

PCBs (short for a family of chemicals known as polychlorinated biphenyls) are highly stable, nearly indestructible compounds formerly used in electrical transformers, hydraulic fluids, plastics, paints, and a host of other products. High temperature incineration (2700°F.) is the only approved method for their disposal.

Although they have been manufactured since the 1920s, an accidental discovery in 1966 found the contaminant to be widespread in the environment. The discovery caused a clamor among ecologists and health authorities in speculation about their effects in the food chain, especially in aquatic organisms where toxic levels of PCBs can be found.

Chronic exposure to PCBs can cause serious health effects to animals and man. In 1968, over 1,000 Japanese developed physical abnormalities when exposed accidentally to large doses of PCBs in rice oil. Their symptoms included severe acne, eye discharges, darkening of the skin, birth defects, and miscarriages. Very little is known, however, about the long-term effect of PCBs on human health.

PCBs characteristically accumulate in the body fat of animals—and man—and because of the stability of the chemicals organisms rid themselves of the contaminant at extremely slow rates.

The production for domestic use of PCBs was finally halted by the passage of the Toxic Substance Control Act of 1977. But the catch is, roughly one-half (250 million lbs.) of all PCBs ever manufactured are still in existence and much of it will be entering the environment for a long time.

Their entry into the environment through the "back door" via leakage from landfills, runoff, accidental spills, and other means has been a concern to the Interior Department's U.S. Fish and Wildlife Service

(FWS). Agency researchers are attempting to better understand just what happens to PCBs entering the environment, particularly through our river systems.

Previous research has concentrated on freshwater bodies such as the Great Lakes, which act as a catch basin for the by-products of human society. The present FWS concern is what happens to PCBs and similar contaminants entering the environment through river systems. In addition, they are trying to see what happens to living organisms that come into contact with the contaminant. The strategy of the FWS is to concentrate its efforts on the Mississippi River and apply the knowledge to other similar rivers throughout the United States.

PCB levels in the Mississippi below Minneapolis and St. Paul are rather high, but at nowhere near the level at other locations. Lake Pepin, 80 miles down river from the Twin Cities, receives a rather stiff dose of contaminants, which tend to settle out in the lake. High water levels during the spring thaw carry much of the sediment and contaminant load to Lake Onalaska, 70 miles further down river at LaCrosse, Wisc., where research efforts are concentrated.

"There should be no cause for alarm or panic along the Mississippi concerning PCB levels," says an FWS spokesman. "They are there, but not in excessive quantities."

Various fish in the Great Lakes system contain PCB levels in excess of the "5 parts per million" health authorities have established as safe to eat. Certain fishes, namely carp, exceed this 5 ppm base in Lake Pepin. The commercial sale of this fish was banned in the lake, curtailing a local business.

FWS researchers are studying the bottom sediments, which range from clay and silt to sandy material. They hope to correlate bottom types and PCB levels with the living organisms found in this type of habitat. The research pays particular attention to fingernail clams and the mayfly, which act as indicator species because they are common, widespread, and act as carriers for contaminants found in bottom sediments. Fingernail clams and mayflies are

fed upon heavily by other wildlife species. Fish are fond of mayflies and waterfowl, particularly scaup, dine on the tiny fingernail clam.

### Cage Birds Continue Popular

The cage-bird trade booms. Exports globally are around 7.5 million birds a year (1972 figures). Japan alone imports over one million. Of birds now in cages in U.S. homes, 80 percent started life in the wild in foreign lands. They are the "fortunate" ones; the survival rate between catcher and customer is around 20 percent.

Rare species are especially prized. Wild populations are declining alarmingly — at least nine have plunged into the endangered category. Some countries have introduced import controls but most have not.

### Future Carburetors May Be Nonadjustable

The EPA has announced changes in emission test procedures that could lead to nonadjustable carburetors in the early 1980s. The changes are being made because many car owners are adjusting their carburetors to improve performance, with a resulting increase in pollution.

Under existing rules, prototype vehicles must meet emission rules when carburetor and spark timing settings are as specified by the manufacturer. Under the new rules, which take effect with 1981 models, cars must pass such tests at whatever settings are physically possible.

As a result, auto companies will either have to produce nonadjustable carburetors and distributors or greatly reduce the adjustment range of these devices.

Auto industry reaction has been favorable, with estimates that the rule change will cost less than \$10 per car. However, there have also been warnings that during the first 600 to 1,200 miles of engine operation, the cars may not run as smoothly as they might be expected to.







1979. "Future Carburetors May Be Nonadjustable." *Field Museum of Natural History bulletin* 50(3), 34–34.

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